



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|----------------------------|------------------|
| 09/893,584 | 06/29/2001 | Sudhakar Ganti | 78945-7 /jlo | 5613 |
| 29382 7590 01/26/2007 TROPIC NETWORKS INC. DR. VICTORIA DONNELLY 135 MICHAEL COWPLAND DRIVE KANATA, ON K2M 2E9 CANADA | | | EXAMINER CHANKONG, DOHM | |
| | | | ART UNIT 2152 | PAPER NUMBER |
| SHORTENED STATUTORY PERIOD OF RESPONSE | | | MAIL DATE | DELIVERY MODE |
| 3 MONTHS | | | 01/26/2007 | PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

09/893,584

Applicant(s)

GANTI ET AL.

Examiner

Dohm Chankong

Art Unit

2152

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 36-53 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 36-53 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1> This action is in response to Applicant's request for continued examination, filed 7.20.2006 and Applicant's response to the notice of a non-compliant amendment, filed 10.26.2006. Claims 1-35 are cancelled. Claims 36-53 are new. Claims 36-53 are presented for further examination.

2> This is a non-final rejection.

Continued Examination Under 37 CFR 1.114

3> A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7.20.2006 has been entered.

Response to Arguments

4> Applicants arguments have been fully considered but are moot in view of the new grounds of rejection set forth in this action.

Allowable Subject Matter

5> It is noted that claims 38 and 52 contain important limitations in the preamble of their respective claims. While these limitations are given patentable weight since they limits the

Art Unit: 2152

structure of the invention, the Office submits that these claims should be rewritten so as to incorporate the limitations into the body of the claim. The limitations recited in the preamble are critical to Applicant's invention and possibly contain allowable subject matter. They therefore would be better served claimed in the body of the claim.

6> Claims 37, 38, 47 and 52 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action. Claims 38 and 52 should also be rewritten or amended to overcome the concerns with respect to the limitations being recited in the claims' respective preambles. The following is a statement of reasons for the indication of allowable subject matter: the configuration of multiple policers in series whereby each policer (beside the first) receives as inputs the results (conforming packets) of every preceding policer and packets corresponding to each policer's assigned traffic class is unique (and is not recited in other claims). However, these claims should be rewritten or amended to overcome the concerns under 35 U.S.C. §112, 2nd paragraph addresses below.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7> Claims 36-53 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Art Unit: 2152

a. Claim 36 contains vague language that does not clearly describe applicant's invention. Specifically, claim 36 recites, in part: "identifying conforming packets of each successive traffic class based on...a combination of arriving packets of each successive traffic class and conforming packets of all preceding traffic classes."

The claim does not describe how conforming packets are identified using the combination of factors. In other words, the claim does not provide clear guidance to one of ordinary skill in the art how a packet "conforms" based on "the combination of arriving packets of each successive traffic class and conforming packets of preceding traffic classes" and a sum of committed information rates of preceding traffic classes and said each traffic class.

Put more simply, claim 36 (and other independent claims) simply disclose determining conformance of the packets based on certain criteria but does not explain how the criteria is used to determine conformance. The claims should be amended to more clearly define how the criteria (conforming packets of preceding traffic classes and cumulative guaranteed service rates) is utilized to determine conformance of packets of a traffic class.

b. Similar remarks apply to independent claims 37, 38, 45, 47 and 52. For example, claim 37 recites "policing said combination according to a sum of said first committed information rate and a second committed information rate." This fails to claim how the combination is policed according to the sum. Similarly, claim 37 also recites marking "conforming second-class packets as a conforming second-class packet." The claim however fails to disclose how a packet is determined to be conforming. The

Art Unit: 2152

claim recites a second policer "determining conformance of arriving second-class packets" but does not explain how the policer determines that the packet conforms.

c. Dependent claims are rejected for their dependence on the independent claims.

d. Claim 42 describes marking packets as conforming if they conform to the service rate. This clearly and definitively describes how packets are determined to be conforming. The independent claims should contain similar language.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8> Claim 36 is rejected under 35 U.S.C. §103(a) as being unpatentable over Veres et al, U.S. Patent No. 6,614,790 ["Veres"].

9> As to claim 36, Veres discloses a method of policing transfer of packets, each packet belonging to one of a plurality of ordered traffic classes where each traffic class is allocated a respective committed information rate, the method comprising:

receiving arriving packets of a first traffic class from among said plurality of ordered traffic classes [column 4 «lines 51-60»];

Art Unit: 2152

identifying conforming packets of said first traffic class according to a first rate
[column 3 «lines 34-49» | column 4 «lines 9-22»]; and

identifying conforming packets of each successive traffic class based on:

a combination of arriving packets of said each successive traffic class and
conforming packets of all preceding traffic classes [column 4 «lines 51-55» | column 4
«line 61» to column 5 «line 9»]; and

a sum of rates of all preceding traffic classes and a rate of said each successive
traffic class [column 4 «lines 51-55» | column 4 «line 61» to column 5 «line 9» where :
Veres determines whether to accept a request based on looking at the packets of the
current class as well as all packets belonging to higher classes and determining
whether there is enough bandwidth to accept the request].

Veres does not expressly disclose identifying conforming packets according to
committed information rates (CIRs). However CIRs are well known in the art for being
used to determine whether packets are exceeding bandwidth or service guarantees.
Additionally, Veres does disclose identifying conforming packets based on a bandwidth rate
[column 4 «lines 44-48» | column 5 «lines 14-33»].

10> Claims 39 and 45 are rejected under 35 U.S.C §103(a) as being unpatentable over Hoar
et al, U.S Patent No. 7,123,583.

11> As to claims 39 and 45, Hoar discloses a method of policing a plurality of K traffic
classes of a service, K exceeding one, said method comprising:

Art Unit: 2152

classifying said K traffic classes as traffic-classes as traffic class 1 to traffic class K
[column 2 «lines 33-38» | column 6 «lines 36-43»];

verifying conformance of packets of traffic-class 1 to a first pre-assigned guaranteed service rate [abstract | column 2 «lines 47-58» : primary flow corresponding to first traffic class];

determining a cumulative guaranteed service-rate for traffic class j, $2 \leq j \leq K$, as the sum of said first pre-assigned guaranteed service rate and pre-assigned guaranteed service rates for each of traffic classes 2 to j [Figure 6 | column 9 «lines 3-51»];

establishing conformance of packets of traffic class j, $2 \leq j \leq K$, taken in combination with conforming packets of traffic class 1 to traffic class (j-1), to said cumulative guaranteed service rate [Figure 6 | column 9 «lines 3-51» | column 16 «lines 4-13» where : flow is the primary flow (class 1) and where available bandwidth is passed from a first level policer to a second level policer];

marking a packet of traffic class 1, which packet results in exceeding said first predefined guaranteed service rate, as a non-conforming class-1 packet [column 10 «lines 35-63»]; and

marking packets of traffic class j, $2 \leq j \leq K$, which packets in combination with conforming packets of traffic class 1 to traffic class (j-1) results in exceeding said cumulative guaranteed service rate as non-conforming class-j packets [column 9 «lines 3-51» | column 15 «lines 35-56» | column 16 «lines 4-13»: the invention first determines conformance of the primary flow then the aggregate flow, where remaining traffic is passed on an opportunistic basis].

Hoar does not expressly disclose classifying traffic classes as 1 to K but does disclose monitoring classes of services, where each class is assigned to a particular flow. Hoar's flows are analogous to the classified classes [Figure 6].

12> As to claim 40, Hoar discloses verifying is based on a leaky-bucket mechanism associated with said traffic class 1 and said establishing is based on a leaky-bucket mechanism associated with said traffic class j [column 10 «lines 35-63»].

13> As to claim 41, Hoar discloses establishing comprises a step of generating policing units at a rate reflective of said cumulative guaranteed service rate [column 6 «lines 30-46»].

14> As to claims 42 and 46, Hoar discloses:

marking individual packets of traffic-class 1, which packets collectively conform to said first predefined guaranteed service rate, as conforming class-1 packets [column 6 «lines 30-47» | column 9 «lines 3-51» : primary flow has its own rate]; and

marking individual packets of traffic class j, $2 \leq j \leq K$, which packets in combination with conforming packets of traffic class 1 to traffic class (j-1) collectively conform to said cumulative guaranteed service rate, as conforming class-j packets [[column 9 «lines 3-51» | column 15 «lines 35-56» | column 16 «lines 4-13»].

15> As to claim 44, Hoar discloses classifying reflects a predetermined priority order [column 9 «lines 3-13»].

16> Claim 43 is rejected under 35 U.S.C §103(a) as being unpatentable over Hoar in view of Zdan, U.S Patent Publication No. 2002|0191622.

17> As to claim 43, Hoar does disclose different traffic classes but does not expressly disclose that the classes are part of the classed defined in the differentiated service specified by the IETF.

In the same field of invention, Zdan is directed towards a system for differentiated queuing. Zdan discloses $K=4$ and that said plurality of K traffic classes comprise:

a class of expedited-forwarding differentiated service, a class of assured-forwarding service, a class of assured forwarding 2 service, a class of best-effort service [abstract | 0004, 0027]. Zdan discloses each class has its own queue [0040]. It would have been obvious to one of ordinary skill in the art to implement Hoar's classes as the differentiated services classes taught by Zdan. Differentiated service classes are well known in the art and one would have been motivated to incorporate them into Hoar's invention to provide guaranteed service to aggregate service classes [Zdan, 0004].

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Berger et al, U.S Patent No. 5,274,644;

Peris et al, U.S Patent No. 5,796,719;

Art Unit: 2152

Ganmukhi et al, U.S Patent No. 5,850,399;

Bonomi et al, U.S Patent No. 5,864,540;

Beshai et al, U.S Patent No. 6,041,040;

Vaid et al, U.S Patent No. 6,119,235;

Chow et al, U.S Patent No. 6,438,134;

Pillar et al, U.S Patent No. 6,438,106;

Chard et al, U.S Patent No. 6,594,234;

Howard, U.S Patent No. 6,683,884;

Nandy et al, U.S Patent No. 6,826,147;

Stacey et al, U.S Patent No. 6,834,053.

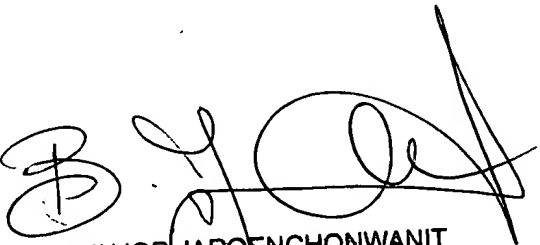
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dohm Chankong whose telephone number is 571.272.3942. The examiner can normally be reached on Tuesday-Friday [7:30 AM to 4:30 PM].

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bunjob Jaroenchonwanit can be reached on 571.272.3913. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2152

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DC



BUNJOB JAROENCHONWANIT
SUPERVISORY PATENT EXAMINER